



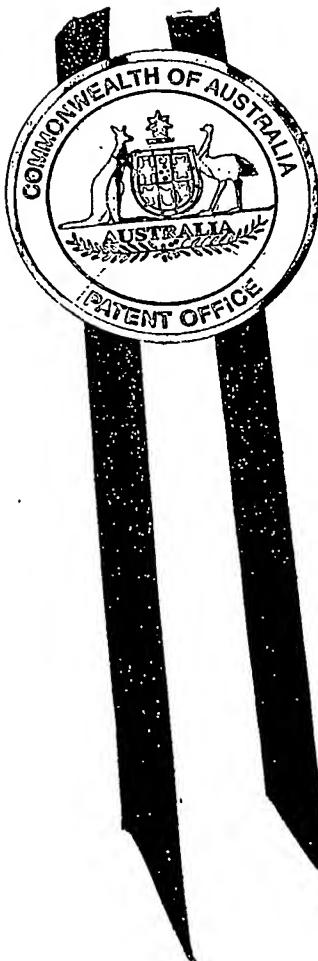
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I, JULIE BILLINGSLEY, TEAM LEADER EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the Provisional specification in connection with Application No. 2003903547 for a patent by NEOFERMA AUSTRALIA PTY LTD as filed on 10 July 2003.



WITNESS my hand this  
Twenty-first day of July 2004

**JULIE BILLINGSLEY  
TEAM LEADER EXAMINATION  
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## STRUCTURES AND METHODS OF WATERPROOFING SAME

### Technical Field

The present invention relates to structures and methods for  
5 waterproofing same.

### Background Art

Larger structures which are built on inground foundations are  
notoriously difficult to waterproof and current procedures that are used to  
10 provide waterproofing require peripheral excavation which are time  
consuming and costly and depending on site conditions, may restrict  
economic use of a site.

In addition, excavations for inground foundations often are  
made at or below the water table which increases the need for an efficient  
15 means of waterproofing same.

It is an object of the present invention to provide a structure and  
a method of waterproofing a structure which increases land use efficiencies  
and provides improved waterproofing.

Further objects and advantages of the present invention will  
20 become apparent from the ensuing description which is given by way of  
example.

### Disclosure of Invention

According to the present invention, there is provided a method  
25 of construction comprising

(a) laying an overground foundation integral with a peripheral  
footing,

(b) creating a channel in the footing which is parallel with the  
outer perimeter of the foundation, and

30 (c) placing upright waterproof precast panels in the channel.

The panel can be elevated above the base of the channel by a  
structural grout.

Bentonite can be applied on both sides of the grout.

The channel is sufficiently wide to provide a drain on the inner sides of the panels.

Gaps between adjacent vertical edges of the panels can be  
5 waterproofed.

The waterproofing can be shielded by a sheet material located in slots in edges of the respective panels.

The waterproofing can be achieved by the provision of an expanding bentonite adjacent the shield and a compression gasket adjacent  
10 the bentonite.

According to a further aspect of the present invention, there is provided a building structure comprising an above ground raft foundation having a channel adjacent the periphery of the foundations and a plurality of waterproof precast panels positioned in an upright position within the channel.

15 According to a still further aspect of the present invention, there is provided a precast concrete panel having an integrated waterproof membrane on at least one surface thereof.

#### Brief Description of the Drawings

20 Aspects of the present invention will now be described with reference to the accompanying drawings, in which:

Figure 1 is a side view of a peripheral portion of a foundation and wall structure according to the present invention, and

25 Figure 2 is a plan view of a joint between wall panels according to the present invention.

With respect to the drawings, a structure according to the present invention comprises an aboveground raft foundation generally indicated by arrow 1 having a channel 2 adjacent the periphery of the foundation, a plurality of precast panels 3 positioned in an upright position  
30 within the channel 2.

The panels 3 are erected adjacent the outer edge of the channel 2 with a gap 6 between the edge and the outer surfaces of the

panels. Edges of the membrane are overlapped in the gap.

The panels are supported by a structural grout 7 and to either side of the grout Volclay bentonite strips 8 are positioned.

The inner side of the channel provides a drain 8a.

5 The higher edges of the membrane on the outer walls of the slabs can be covered by a suitable flashing 9.

The panels are erected with a space 10 between their adjacent edges.

10 Each edge 11 of the panels is provided with a groove 12 onto which a shield such as a PVC sheet is inserted.

Immediately behind the shield a waterproofing material such as expanding bentonite 13 is positioned and immediately adjacent the bentonite a compression gasket 14 is fitted.

15 A similar system of waterproofing a joint is described by international patent application no. PCT/AU02/01381.

The present invention has a number of advantages including:

- There is no need to over-excavate as there is no need to access the outside of the wall.
- Maximum utilisation of building site is achieved.
- 20 • There is dramatic reduction to construction programme for basement work (up to 50%)
- The system removes the need for the following trades:
  - Concreters
  - Formworkers
  - Steelfixers
  - Waterproofers
- 25 • The system achieves savings on services costs such as water, electricity, craneage, etc.
- The system reduces the need for on-site storage and accommodation.

30 Aspects of the present invention have been described by way of example only and it would be appreciated that modifications and additions

thereto can be made without departure from the spirit or scope of the invention.

DATED this 10<sup>th</sup> day of July 2003

**Neoferma Australia Pty Ltd**

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By its Patent Attorneys

Cullen & Co.

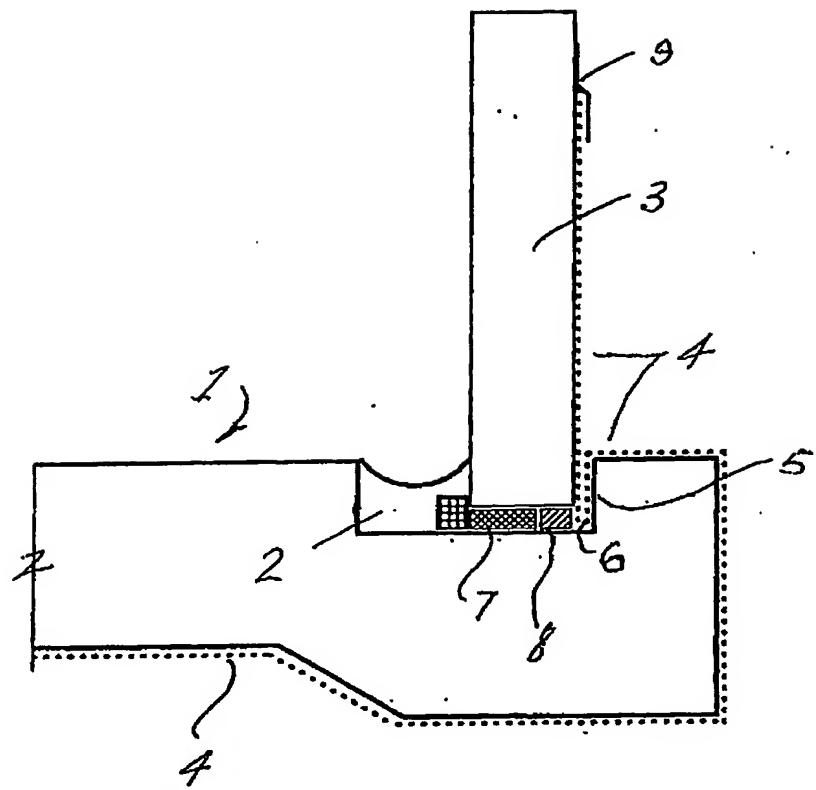


FIG 1

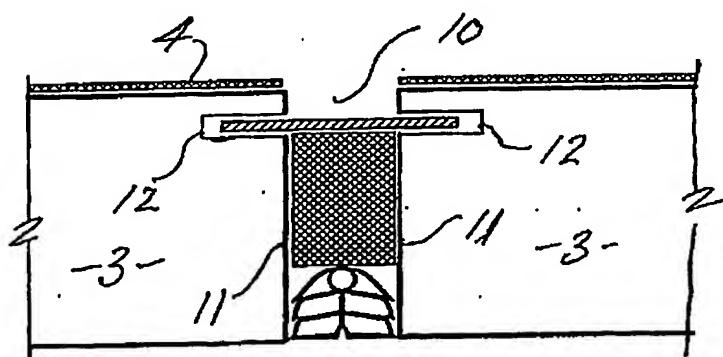


FIG 2